



# The Raleigh Amateur Radio Society's **EXCITER**

## GET INVOLVED

- RARS General Membership meeting: Second Tuesday of the month.
- The RARS net meets every night except Saturday @ 8 p.m. on 146.640.
- The RARS Technical & Trader's net: Saturdays @ 8:00 PM on 146.64.
- RARS meets for a monthly dinner on the First Tuesday of each month.



## PUBLIC SERVICE EVENTS

Interested in helping? Visit  
<https://www.rars.org/public-service.php>

frequently for our 2019  
ham public service  
schedule.

## RARS General Meeting

**Topic:** RARS Officers election and Show and Tell.

**By:** Election committee

**Date:** November 12, 2019

**Time:** Meeting at 7:30 PM

*Informal gathering and refreshments from 7 - 7:30 p.m.*

**Where:** Ridge Road Baptist Church. 2011 Ridge Rd., Raleigh

**New HAM meeting,** 6:00 p.m. before member meeting

Tadd Torborg, KA2DEW, New Ham Meeting Coordinator

[Click here for more information.](#)

## Presidents Comments

By Carl Davis, W8WZ

Our 2019 Fall New Ham Class is off to a great start. We hit the maximum attendance limit of 20 students about one week before the class started. Historically, we have hit that number then had about 10 of the registrants actually show up. This time we had 18 of the 20 show up. Those students represent a great variety of ages and backgrounds. We have college students to retirees. We have folks with no electronic backgrounds as well as electrical engineers. We have men and women and everyone seems very happy to be entering our great hobby. We have a couple parent/child teams in the class as well.

This is our first time teaching these classes through the Wake County Public School System's Life Long Learning program and

[Continued on page 4](#)

## RARS Officers

### **PRESIDENT**

Carl Davis  
W8WZ  
773.949.5243  
[w8wz@aol.com](mailto:w8wz@aol.com)

### **VICE PRESIDENT**

Tom Lewis  
N4TL  
[N4TL2@yahoo.com](mailto:N4TL2@yahoo.com)

### **SECRETARY**

Tara Goodwin  
W4TSW  
919.616.0211  
[taraskirby@gmail.com](mailto:taraskirby@gmail.com)

### **TREASURER**

Greg Seamster  
KE4PAX  
919.859.0029  
[KE4PAX@arrl.net](mailto:KE4PAX@arrl.net)



## The Raleigh Amateur Radio Society

The Raleigh Amateur Radio Society, Inc. (RARS) was founded in 1969 and continues to serve and support the amateur radio community in the greater Triangle area. In 1999, the society incorporated a new RARS and obtained 501(c)(3) non-profit tax status.

The objectives of the club are to promote worldwide friendship through amateur radio; to be of public service by providing radio communications in times of disaster, emergency, or civic needs; to educate members in radio technique, and to provide training classes to assist in obtaining amateur radio licenses.

Anyone interested in amateur radio is eligible to apply for membership. Dues for regular licensed amateurs are \$18 per year (from July 1 through June 30). Additional immediate family members pay \$5 each per year. Dues for licensed amateurs older than 59 or younger than 16 are \$12 per year. Dues for non-licensed associate members are \$9 per year. Applications for membership may be obtained from the treasurer or on the RARS website ([www.rars.org](http://www.rars.org)).

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## ***Exciter***

The Exciter is the official newsletter of the Raleigh Amateur Radio Society. It appears each month as a PDF on the RARS website at [www.rars.org](http://www.rars.org). Members receive email notification when the latest version is available. Please provide your email address to the Treasurer.

The Exciter welcomes articles, advertisements, and other contributions. To submit a piece to the newsletter, please contact the Editor. The Editor reserves the right to edit any and all pieces. The submission deadline for each month's Exciter is the Saturday that is ten days before the general meeting. All submissions must be final. Drafts are not accepted.

The views expressed in the Exciter are those of the individual authors and do not necessarily reflect the views of the Editor or RARS.

Tom Lewis, N4TL, editor ([editor@rars.org](mailto:editor@rars.org))

## For Your Information

### RARS General Meeting

Date: Second Tuesday of each month

Location: Ridge Road Baptist Church 2011  
Ridge Road Raleigh, NC, 27607

Time: People begin arriving at 7 p.m. The  
meeting officially begins at 7:30 p.m.

### RARS Monthly Dinner

All members and guests are welcome to the monthly (first Tuesday) RARS Supper, 6:30PM, at the IHOP Restaurant, 7471 Six Forks road, 27615. Its on the corner of Six Forks road and Sawmill Road, 6:30 PM to 8PM They have a room for us that is to the left when you enter the restaurant. Informal and Dutch, just bring your appetite and best rag to chew.

### RARS Repeaters in Raleigh

146.640 and 444.525

Join us for the nightly RARS net at 8 p.m. on the 146.640 repeater. All hams holding a Technician class license or higher are invited to check in. We welcome both RARS and non-RARS members to the net.

There is a net Listing on the RARS web-site click here. <https://www.rars.org/nets.php>

### VE Testing

The RARS VEs will accept walk-in testing in February, May, August and November at 5:30PM, prior to RARS membership meetings at Ridge Road Baptist Church; the RARSfest in April; the Cary Swapfest in July; the JARS-Fest in November; and following RARS license classes. Please bring a photo ID, your original and a copy of your current license, your \$14 exam fee, and any valid CSCEs that prove passing elements beyond that of your current license. Visit <https://www.rars.org> for more information.

## September 2019

### RARS Net Monthly Summary

Checkins: 479

Traffic Brought/Passed: 8/6

Minutes: 1000

Sessions: 30

## October 2019

### RARS Net Monthly Summary

Checkins: 455

Traffic Brought/Passed: 16/12

Minutes: 988

Sessions: 31

### Special 10 Meter Net

Checkins: 16

Minutes: 50

Sessions: 1

Virginia Enzor NC4VA

RARS Net Manager

## September Membership Meeting

During the meeting the Nomination Committee Chair, Chuck Littlewood, K4HF, presented the list of candidates for the coming year. The list is in the October minutes on [page 23](#) of this exciter.

## Presidents Comments continued

this system seems to be working very well. The facility we teach in at Sanderson High is outstanding. We have a very comfortable classroom that is handicap accessible and has access to the school's restrooms and audio/visual setup. Parking is easy and their staff is extremely helpful. We will continue to offer this class every Fall.

The classes are being taught by an entire team of volunteer instructors, including: NC4TS, W8WZ, N1FUA, KM4JRH, NC4VA and K4MHM. Each instructor is teaching a topic that he or she especially enjoys.

An additional team of Volunteer Examiners will provide the test on 2 November.

During our first class, we made a 2-way contact on VHF from an HT in the classroom and showed what an HF radio looks like. The class enjoyed seeing how repeaters work and we thank KA2DEW who answered our call that evening and talked with the students.

Each student has been given a voucher for a free RARS membership. The student may claim that membership by presenting that voucher and informing us of his or her new call sign at any RARS meeting. So we look forward to seeing each of these fine people at an upcoming RARS meeting. As you see them at meetings and hear them on the air, please be sure to give them a great welcome to our hobby and community.

73 Carl W. Davis,

## Fall 2019 New Ham Class



The RARS Ham Radio Class made it on WRAL TV. A video clip is located at this web address.

<https://www.wral.com/wake-county-public-schools-adult-night-class-provides-learning-after-dark/18721443/>

The RARS part starts at 57 seconds into it and runs for about 20 seconds.

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<https://www.rars.org>



## RARS September Membership Meeting, Auction pictures



Carl Davis, W8WZ, Our Auctioneer  
Jan Lewis (N4TL XYL) helping out behind the table



## September Membership Meeting, Auction pictures



## RARS Birthdays

Joe	WA4GIR	11/02
Donovan	KN4UFP	11/02
Mark	KM4PFO	11/06
Carroll	KD4JH	11/07
Jeff	AC4ZO	11/08
John	KK4ZEV	11/08
Lynn	W9CLF	11/09
Steve	KN4GYT	11/11
Rich	NC4EN	11/11
John	K4TOO	11/11
Steven	KE4QBH	11/12
Mike	KN4LHB	11/12
Glenn	NC4NC	11/16
Ron	KD4LOE	11/18
Rolf	K8SL	11/19
Kerry	KC1ANG	11/19
Nikolay	KM4UAG	11/20
Donna	KM4WRP	11/20
Donald	KJ4DNI	11/21
Laura	KG4WQT	11/24
Terri	N4ZUD	11/25
Lannie	KK4QEF	11/25
Doug	N3LTV	11/26
Clare	N2RJB	11/30
Jeremy	KN4TID	11/30

*Everyone is  
welcome!*



11:30 AM every Thursday a group of Hams get together for Lunch at Taco Bell. The address is 7036 E Hwy 64 Knightdale, 27545. 1.2 miles east of I540.

## New Members

Glen Passner (Comp)	KE4NPZ
Kerry LeBlanc	KC1ANG
Nick Pike	KN4WNW
Brantley West III	K4CBW
Lyle Hannum	KN4YYU
Daryl Garrett	KX4WY

*New HAM meeting, 6:00 p.m. before the  
member meeting*

*Tadd Torborg, KA2DEW, New Ham meeting Coordinator*

*The New Hams meeting is held every month before the regular RARS meeting.  
We'll try to start by 6pm. We try to address topics in a manner that will be of help  
to hams in their first year of operation.*



Hams at the new hams meeting working on putting connectors on coax cables.



# Future Hamfests

A full list of Hamfests can be found at the  
[ARRL website.](#)

## **11/17/2019 | JARSFEST**

**Location:** Benson, NC  
**Type:** ARRL Hamfest  
**Sponsor:** Johnston Amateur Radio Association  
**Website:** <http://jars.net>

## **01/11/2020 | W4NC First-Fest**

**Location:** Winston-Salem, NC  
**Type:** ARRL Hamfest  
**Sponsor:** Forsyth Amateur Radio Club  
**Website:** <http://W4NC.com>

## **03/13/2020 | Charlotte Hamfest, ARRL North Carolina Section Convention 2020**

**Location:** Concord, NC  
**Type:** ARRL Convention  
**Sponsor:** Mecklenburg Amateur Radio Society  
**Website:** <http://www.charlottehamfest.org>

## **04/11/2020 | Raleigh Hamfest, ARRL Roanoke Division Convention**

## **RARSfest**

**Location:** Raleigh, NC  
**Type:** ARRL Convention  
**Sponsor:** Raleigh Amateur Radio Society  
**Website:** <http://rarsfest.org>

# Interesting websites & Miscellaneous info

**DX Engineering presentation about grounding.**

[https://www.youtube.com/watch?time\\_continue=1&v=SaHKCbXGSGk](https://www.youtube.com/watch?time_continue=1&v=SaHKCbXGSGk)

Thanks to WA4OSS for sending this to the Exciter

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**VOACAP Online HF Predictions (Amateur Radio)**

<https://www.voacap.com/hf/>

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**City lights in Korea and Japan.**

The [pskreporter website](#) shows band activity for digital modes. I noticed that in the Display options you can turn on and off “Hide City Lights”.

I left the city lights on and zoomed in on Korea and Japan and did this screen capture.



[ClubLog](#) lists North Korea as the most needed entity in the world

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<https://www.rars.org>

# Interesting websites & Miscellaneous info

## Let Club Log find DX for you

I found a tool on the [Club Log website](#) that will find DX based on an uploaded log. I uploaded my log some time ago and updated it yesterday. I noticed that in Tools, DX Cluster, there is a search based on my log. I used the filter “New band slots” and clicked run search. The website generated a list of stations that would increase my band country count if I were able to work and confirm them. Many spots were reported by hams in other parts of the world and are not workable at the time I generated the list. However, the list also has “Prop” column. If you click on that, the website will run a propagation program and it will tell you the best time and frequency to listen for the station. The Club Log website is free to use, you only have to register your call to use it.

73 Tom N4TL

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## ARRL Contest Update

Every two weeks the ARRL sends out an electronic newsletter about contesting. The one for October 30, 2019 has Daniel Marks's, KW4TI, KiCAD presentation in it.

### TECHNICAL TOPICS AND INFORMATION

*If you're not familiar with KiCAD, you can learn more from Dan's, KW4TI, presentation "[Open Source for Amateur Radio Projects](#)" made to the Raleigh Amateur Radio Society of September 10, 2019. He walks through the entire process of taking a design from schematic capture all the way to sending a Gerber file to a board fabrication house for manufacture. It's easier than ever to get quality PC boards fabricated inexpensively, and projects built this way can be less prone to wiring errors and more rugged than point to point wiring construction*

# Interesting websites & Miscellaneous info

Nicely formatted DX Calendar

<https://dxnews.com/calendar/>

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## Amateur Radio and Esperanto

Esperanto was developed by LL Zamenhof and published in 1887. It has 16 rules of grammar with no exceptions, has no irregular verbs, no genders, with the vocabulary coming from European languages. The language is spoken in 135 countries and is estimated to have between one and two million speakers. Esperanto was proposed to be used by radio amateurs before Q codes were widely adopted because it is so easy to learn.

The **International League of Esperantist Radio Amateurs** (*Internacia Ligo de Esperantista Radioamatoroj* [**ILERA**]) was founded in 1970. It organizes radio programs in Esperanto and publishes the *ILERA bulletin*.

Likely frequencies for Esperanto conversations on the air are 1866, 3766, 7066, 14266, 28766 kHz for Voice (SSB), and 3640, 14166, 28266 kHz for CW, generally on weekends, according to Net Schedules published on the ILERA web site.

Every year ILERA organizes the Esperanto contest on the third Saturday and following Sunday in November. So in 2019, it is: **Nov. 16 & 17**. Some hams in the area are planning to participate.

Sources:

[https://en.wikipedia.org/wiki/International\\_League\\_of\\_Esperantist\\_Radio\\_Amateurs](https://en.wikipedia.org/wiki/International_League_of_Esperantist_Radio_Amateurs)

A ham website: <https://www.qsl.net/ly2fn/>

Richard Strolia (LY2FN) of Lithuania

Sent to the Exciter by Murray Merner, K4MHM

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<https://www.rars.org>



## Future RARS Meeting Topics

Titles, topics, and speakers subject to change.

11/12/2019	RARS Officers election and Show and Tell. Bring something of interest in Ham Radio that you would like to show off. Be prepared to talk about it. The time will be limited so everyone can have time to show their item.	Election committee & members
12/10/2019	RARS pot luck Holiday party. Sign up at the RARS website. RARS Officers induction.	Election committee

## QLog to help Blind Hams work Digital modes.

From: Rich - K1HTV

There is a program called QLog, which, in conjunction with WSJT-X, will allow blind and visually impaired Hams to work FT8 and a number of other WSJT-X modes. Commands are presently input via keyboard with a number of shortcut keys. A screen reader is normally not used once QLog is up and running as all voice alerts, instructions and QSO progress messages are voiced using your computer's main sound card, the same one used for Windows sounds.

With QLog the user has a number of options:

- 1 Answer the first station calling CQ that passes a number of filters that the user has set, such as All Time New One, DX Only, New Band or Mode, QSL by LOTW, exceeds a SNR Signal to Noise dB threshold level, et cetera.
- 2 Call CQ and answer the first station who responds.
- 3 Select one or more stations, countries or grids of list of decoded stations. Each call is announced along with the station's country, his grid, SNR level and if he is transmitting the odd or even sequence. The user selects which station or stations he is interested in answering on their next decoded CQ.
- 4 Use the Fox/Hound mode to work DXpeditions as a hound.
- 5 Participate in a number of contests and special events such as Field Day, VHF contests and the RTTY Roundup.

The QLog program with voice assist has been under development since early this year and has been rigorously tested by a team of blind beta testers. We meet via teleconference each week to discuss bugs

## QLog to help Blind Hams work Digital modes continued

found, how the latest version is working and how QLog can be improved. A number of our blind beta testers have successfully worked many dozens of countries, with some approaching DXCC. Others have almost completed working all States using QLog with WSJT-X. The fully functional version of QLog is now available to members of the QLOGUsers@groups.io group .

The important thing to note is that before QLog can be used, the station must have successfully completed FT8 contacts using WSJT-X. Only then should QLog be run and used to make digital QSOs.

There are voice prompts throughout the QSO sequence with auto logging at the end of a QSO. The log can be exported as an ADIF file.

If you are user of QRZ.COM, ClubLog or eQSL each completed QSO can be automatically uploaded to those sites. The QLog program has been well documented with a user's Manual as well as a setup manual for your sighted help who should be familiar with the setup and operation of WSJT-X.

Anyone interested in downloading and using QLog, send an email to

QLogusers+subscribe@groups.io

You will be contacted by the administrator and given info on how to proceed to download the QLog.exe program as well as the various help files. The website where the executable program and other files can be found is QLogusers@groups.io in the files folder.

73,

Rich - K1HTV

[www.qrz.com/db/K1HTV](http://www.qrz.com/db/K1HTV)

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I did a search for QLog on Google. I found out that the name Qlog has been used by a number of companies. So it is best to contact Rich via email to find out about the program.

73 Tom N4TL

## RARS Classifieds

Copied from <https://www.rars.org/classifieds.php>

The items below were listed within the last 30 days on the RARS website.

### **MFJ-259B Antenna Analyzer**

Posted November 3rd, 2019 by: WM2Z

Contact: [wmelhado@nc.rr.com](mailto:wmelhado@nc.rr.com)

Used MFJ-259B Antenna Analyzer with carrying case in good condition. There is minimal damage to the case due to battery corrosion but the battery holders and connections are not affected. Includes original manual, carry case with strap and a collection of adapters. Photos available. \$185

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### **M Squared 6 Meter Loop Antenna**

Posted November 3rd, 2019 by: WM2Z

Contact: [wmelhado@nc.rr.com](mailto:wmelhado@nc.rr.com)

M Squared 6 Meter Loop Antenna in excellent condition. Original documentation. \$50

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### **Complete Station For Sale**

Posted November 3rd, 2019 by: WM2Z

Contact: [wmelhado@nc.rr.com](mailto:wmelhado@nc.rr.com)

Downsizing to a location that prohibits outdoor antennas and won't have room for a shack. The following items are for sale:

ICOM IC-7600 HF/50MHz Transceiver (\$1500)

ICOM SP-23 External Speaker (\$90)

ICOM SM-20 Desk Microphone (\$125)

ICOM CT-17 CI-V Interface (\$25)

THP HL-1.5KFX Solid State Linear Amplifier (\$1350)

Vectronix HFT-1500 Tuner (\$175)

Astron RS-35M Power Supply (\$70)

Heil ProSet with HC-4 Element and ICOM adapter (\$25)

Heil Foot Switch (\$10)

Except for the tuner, all items were purchased new by me and used exclusively in a non-smoking

## RARS Classifieds continued

home. All are in excellent working and cosmetic condition and are installed in an active station that is used on a daily basis. Original documentation for major items is included. Items are priced individually at or below 40% of original cost totaling \$3370, but I prefer to sell the equipment as a complete package with all interconnection cables since selling any of the major items will put me off the air anyway. The price for the complete package is \$3000. At that price, I will include a large quantity of long and short coaxial cables, and will also include the operating desk if desired.

I will reserve selling individual items for 30 days, but will build a list of prospective buyers for individual items during that time. The list will be kept in the order in which bids are received, and prospective buyers will be contacted in that order once the decision to break up the station is made.

Photos are available. Serious buyers are welcome to come to my QTH in Wake Forest for a test drive.

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### **KX3-KXPA100**

Posted October 30th, 2019 by: N4CW

Contact: [n4tl2@yahoo.com](mailto:n4tl2@yahoo.com)

KX3 with: KXAT3 ATU, KXFL3 roofing filter, KXBC3 internal NiMH charger and real time KXPD3 keyer paddle, MH3 hand mic, Pro Audio Engineering heat sink, and Pro Audio Engineering KX33 power supply. Cables include KXUSB and Elecraft KX3 to KXPA100 Adapter Cable Latest firmware installed. "Nifty Manual" by N6FN for Elecraft KX3 Plus Options included.

KXPA100F with KXAT100 antenna tuner.

SignalLink USB with cable for KX3.

Contact [N4CW@aol.com](mailto:N4CW@aol.com)

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### **Cushcraft colinear 16 element 2 meter array.**

Posted October 26th, 2019 by: N4TL

Contact: [n4tl2@yahoo.com](mailto:n4tl2@yahoo.com)

Sold for \$17.50 in 1968. See page 46 of July 1968 73 Magazine for an ad. Model CL116. Some parts missing. \$10.00



## RARS Classifieds continued

### Hi Par three element 6 meter

Posted October 26th, 2019 by: N4TL

Contact: [n4tl2@yahoo.com](mailto:n4tl2@yahoo.com)

Folds up and can be transported easily. But is missing the 6 clamps that set the length of each element. Also missing one of the one inch boom clamps. Model HT6. Cushcraft sells a A50-3S for \$169.95.

\$40.00

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### power dividers

Posted October 26th, 2019 by: N4TL

Contact: [n4tl2@yahoo.com](mailto:n4tl2@yahoo.com)

three power dividers for 2 meters and 423 MHz

\$20 each.

Contact N4TL

432MHz 4 way power divider Type N similar to 70CM 4PRT PD by M2, which sells for \$233.95

2 meter 4 way power divider Type N similar to 2M 2PRT PD by M2, but has four connectors on one end.

KLM 2 Meter 2 way power divider Type N similar to 2M 2PRT PD by M2, which sells for \$139.99

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# Minutes

## Raleigh Amateur Radio Society

### Board Members Meeting

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*Date | time* 09/17/2019 @ 7:00 pm | *Meeting called to order by* Carl Davis W8WZ

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#### In Attendance

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8 Members

**Carl Davis – W8WZ**

**Tom Lewis - N4TL**

**Alan Pitegoff - AB4OZ**

**Chuck Littlewood - K4HF**

**Richard Kroeger - N1FUA**

**Joanne Mars – AA3N**

**Tara Goodwin – W4TSW**

**Hank Montgomery- K4HM**

3 Visitors

**Tadd Torborg - KA2DEW**

**Ken Latchum - AD4GX**

**Mark Kilmer - KM4JRH**

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#### Approval of Minutes

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Quorum present. May and July minutes had been tabled, but have now been approved. August minutes were approved. June minutes to be reviewed and brought up for approval at the next board meeting.

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#### President Report-Carl W8WZ

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No report

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#### Vice President Report/Exciter Report-Tom N4TL

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The October club meeting will be the RARS Auction. All submissions for the Exciter should be in 10 days before the next club meeting. The next due date is October 28<sup>th</sup>.

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## Treasurer's Report-Greg KE4PAX

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No report

*For more detailed information regarding Greg's Treasurers report please contact KE4PAX*

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## Secretary's Report -Tara W4TSW

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No Report

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## Committee Reports

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**Education Director-Carl Davis W8WZ:** Carl announced that we have 15 students signed up for the Technician class starting October second. Carl will send a reminder e-mail to all students as well as an information packet. The registration through the school system is going well. All teachers are in place and have the materials needed for the class.

**FM Repeater Chair - Chuck DeCourt W3WZN:** Alan indicated that Chuck has been doing monthly visits to the repeater sites.

**RARSfest Chair-Tara W4TSW:** Tara will schedule an organization and planning meeting for October to start on next years RARSfest, and will put together a news flash for last years event, at Hank's request.

**NCQP Chair - Marty Young W4MY:** Marty provided an e-mail indicating that there will be some changes coming next year and will provide a brief in the near future.

**ARRL Liaison - Chuck K4HF Chuck:** Chuck reported that there is no information from the ARRL. We are still waiting to hear if we will get the 2020 Roanoke Convention. Also he noted that the ARRL has been monitoring the French proposal to allocate more of the 2 meter band to mobile aeronautical service. After a large number of complaints, the 2020 World Radio Conference has dropped the proposal.

**Director-at-Large-Alan Pitegoff AB4OZ:** The 10 meter SSB net is held once a quarter. It is generally the Saturday following the club meeting after the regular 2 meter net. The next, will be held October 8<sup>th</sup>. The frequency is 28.364.

**RARS VE Coordinators - Joe (WA4GIR) and Liz (KO4CK) White:** While not present, indicated that VE support, including Mike Callum (KD4MC), will be provided for our Tech class students

**RARS Webmaster - Hank Montgomery- K4HM:** Hank will move the RARS Auction check-in time to 6:15 to allow more time for setup and registration. He is researching a new web development tool to streamline the web page process. A request was also made for new material, news, etc. to be put on the site. The quarterly 10 meter net information will be added.

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## Non Reports

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**Public Service Director - John Stone K3RHJ:**

**Public Information Officer - Tara Goodwin W4TSW:**

**Field Day Chair - Bob W4TTX:**

**Food Service Chair - Richard N1FUA:**

**Net Manager -Virginia Enzor NC4VA:**

**Director-at-Large - Joanne Mars AA3N:**

**Director-at-Large-Robert Walker K4WWR:**

**W4DW/W4RNC TRUSTEE - Jeff Wittich, AC4ZO:**

**ARRL NC Section Manager - Karl Bowman W4CHX:**

**Youth Director- Murray Merner K4MHM:**

**Immediate Past President - Dennis Keith NC4DK:**

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## Old Business

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Need a sign to let new licensees know that if they are new HAMS they are entitled to a free RARS membership. Carl will follow up.

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## New Business

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Signs are needed to place outside the New HAM and VE session rooms, indicating the location of said events. Mark (KM4JRH) will follow up on the VE testing signs and Tadd (KA2DEW will follow up on the New HAM.

Alan questioned the functionality and timing of the HVAC system as related to in an inconsistency in the temperature in the building. Carl will follow up with the church.

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## Additional Business/Comments/Announcements

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We now have signs inviting all to the club meeting after the VE sessions and New HAM meetings. The signs were made and donated to the club by Joe Rizza (N1LVN).

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## Next Meeting

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10/15/2019, 2011 Ridge Road at 7:00pm

Meeting was adjourned at 8:49pm

Meeting minutes respectively submitted by Mark Kilmer, KM4JRH

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# Minutes

## Raleigh Amateur Radio Society

### Members Meeting

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*Date | time* 10/082019 @ 7:30 p.m. | *Meeting called to order by* Carl Davis (W8WZ)

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#### Membership Meeting

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The monthly membership meeting of the Raleigh Amateur Radio Society met at the Ridge Road Baptist Church in Raleigh. The meeting was called to order, by President Carl Davis (W8WZ), at 7:30 p.m.

The Pledge of Allegiance was recited.

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#### Approval of Minutes

A quorum was present and the September minutes were approved.

#### Continuing Announcements

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The RARS dinner takes place monthly on the first Tuesday of the month at 6:30 p.m. at the IHOP, Celebration at Six Forks, 7471 Six Forks Road, Raleigh.

The next board meeting, which is open to all our members, will be Tuesday October 15<sup>th</sup> at 7:00 p.m. in the church conference room.

Tonight's after-meeting gathering, for any who are interested, will be at the Rudinos at 3101 Edwards Mill Rd, Raleigh.

A new HAM/Elmer's meeting with new HAMs, and anyone interested, takes place before each membership meeting at 6:00 p.m. at the Ridge Road church and presented by Tadd (KA2DEW). Tadd's presentation tonight was fastening connectors to coax cable. Participants made coax jumpers.

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#### Door Prizes

In light of the Annual RARS Auction, there was no drawing tonight.

## RARS Members meeting minutes continued

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### Vice President Report/Exciter Chair-Tom N4TL

Tom reminded the group that the September meeting will be the RARS Annual Show and Tell.

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### Treasurer's Report-Greg KE4PAX

No Report

For those interested in official Treasurer report can contact Greg (KE4PAX)

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### Secretary's Report-Tara W4TSW

No Report

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### Board and Committee Reports

#### **Education Director - (Carl W8WZ)**

Carl announced that the fall Technician License class of 20 is full. There were 18 of 20 attending the first class, with one known ahead of time to be absent.

#### **Director at Large - (Alan AB4OZ)**

Alan will be holding his quarterly 10 meter net, Saturday October 12<sup>th</sup> after the Tech/Trader net. He also announced the upcoming hamfests.

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### Board and Committee with No Report

**Public Service – John, K3RHJ**

**Food Service – Richard, N1FUA**

**ARRL Liaison – Chuck, K4HF**

**Youth Director – Murray, K4MHM**

**Field Day Chair – Bob, W4TTX**

**Net Manager – Virginia, NC4VA**

**Past President – Dennis, NC4DK**

**ARRL Section Manager – Karl, W4CHX**

**Webmaster – Hank, K4HM**

**W4DW/W4RNC Trustee – Jeff, AC4ZO**

**Director at Large – Joanne, AA3N**

**FM Repeater Chair – Chuck, W3WZN**

## **RARS Members meeting minutes continued**

**Public Information Officer – Tara, W4TSW**

**NCQSO Party Chair – Marty, W4MY**

**RARSfest Chair-Tara, W4TSW**

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### **Old Business**

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### **New Business**

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#### **Nomination Committee Chair – Chuck Littlewood, K4HF**

Chuck, reported that the nomination committee has reached their decision for 2020 officers and committee members. The election will be held at the November meeting. Nominations are as follows.

#### **RARS Officers for a Two Term:**

**President: John Honeycutt, N8ZU**

**Secretary: Mark Kilmer, KM4JRH**

#### **Board Members for 1 year term:**

**Public Service: John Stone, K3RHJ**

**Public Information Officer: Tara Goodwin, W4TSW**

**RARS Exciter Editor: Tom Lewis, N4TL**

**RARS Net Manager: Virginia Enzor, NC4VA**

**Director at Large: Alan Pitegoff, AB4OZ**

**Director at Large: Tadd Torborg, KA2DEW**

**Director at Large: Ken Latchum, AD4GX**

**FM Repeater Chair: Chuck DeCourt, W3WZN**

**W4DW, W4RNC, N4RAL Trustee: Jeff Wittich, AC4ZO**

**ARRL Liaison: Chuck Littlewood, K4HF**

**RARS Education Director: Carl Davis, W8WZ**

**RARS Webmaster: Hank Montgomery, K4HM**

**RARS Food Service Chair: Richard Kroeger, N1FUA**

**RARS NC QSO Party Chair: Marty Young, W4MY**

**RARS 2020 Field Chair: Bob Starkenburg, W4TTX**

**RARS Volunteer Exam Coordinators: Joe and Liz White, KO4CK and WA4GIR respectively.**

## RARS Members meeting minutes continued

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### Additional Business/Comments/Announcements

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Charles Gleason (KB4MDZ) – announced that he had been contacted by a small research company seeking a consultant.

Meeting was adjourned at 9:27 p.m.

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### Next Meeting

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11/12/2019, 2011 Ridge Road at 7:30 p.m.

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### 3.5 million Vacuum Tubes

The October 2019 issue of [Electric radio magazine](#) has an article about [ESCR1 Corporation](#) in Orlando, Florida. Grayson Evans, KJ7UM, wrote the five-page article. ESCR1 is a vacuum tube company run by Stan Winston and his wife Stephanie. They both come to the RARSfest every year and sell tubes. Stan took over the company when his father died in 2001. I asked Ray Osterwald, N0DMS, who is the publisher of the Electric Radio Magazine if it was okay to copy information from the article and publish it in the Exciter. He said yes and sent the full article to me. He asked me to give credit to Electric Radio. That full article is the last five pages of this Exciter.

73 Tom N4TL

The next five pages are from the October 2019 Electric Magazine Radio.

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## 3.5 Million Thermatrons and Counting

By Grayson Evans, KJ7UM  
wa4gvm@gmail.com

When Stan Winston goes to work each day, he finds himself surrounded by millions and millions of vacuum tubes and not much else. Stan Winston is the owner of ESRC1 Corporation in Orlando, Florida, (aka The Tube Center, ABC Vacuum Tubes) one of the largest thermatron (vacuum tube) suppliers in the world.

If you have been to one of the larger hamfests in the past decade, you've probably run into Stan and his wife, Stephanie. They invariably have the largest supply of tubes at the show. Stan's favorites are Dayton ("it draws serious buyers") and Orlando, which is where I got to know Stan since I'm always looking for some oddball thermatrons. But only a small part of Stan's sales are at hamfests. He says he has between 750-1000 eBay auctions active a day as well as phone and wholesale orders. Over the last 20 years, he has sold over 18 million tubes. The tube business is alive and well indeed.

Being a modest tube collector myself and having written a book about thermatrons (*Hollow State Design*), I decided it was time to pay Stan and Stephanie a visit and see what 3.5 million tubes in one place looks like. So, I rented a Cessna 172 and flew up for a Saturday visit.

Stan attributes his success to two things. He's not selective about what he buys. He doesn't try to predict what will sell and what won't. Last year, for example, he wound up with thousands of the 50JY6, an octal beam-power tetrode, that

was part of a larger purchase. He figured they had no use but he kept them. Earlier this year someone walked in to his office looking for, you guess it, the 50JY6! Stan sold him 4,000, all he had. "Ya never know" is a phrase Stan uses often.

His other reason is he's not a collector; he doesn't get attached to his inventory. Stan says that people in the tube business that are in love with their inventory don't do well. "I don't hold onto anything."

### ESRC1 Corporation

On the way from the airport, I asked him how he got started in a business most people regard as obsolete. Stan said his father started collecting surplus tubes after WWII and took them to Dayton back in the early days of the show, selling them at low cost. He slowly grew the business right up to the late 1990s and accumulating an inventory of about 150,000 pieces. In 1997, Stan moved from California to help his father with the business. When his father died in 2001 (the weekend of 9/11) Stan took the business over and grew it into what it is today.

ESRC1 (which, according to Stan, doesn't really stand for anything) is housed in a large warehouse in a nondescript office park in the middle of Orlando. Most of the space is taken up with inventory in rows and rows of floor to ceiling shelves (see photos). The majority of the inventory is stored in 35,000 to 40,000 numbered cardboard trays. Not all of the same number is in one tray. A 6AU6 might be distributed across several different trays. He also has an inventory of new ceramic sockets, and a large selection of new high-voltage



**ESRC1 Corporation world headquarters is located in Orlando, Florida. Behind these doors lie one of the world's largest inventories of vacuum tubes.**

capacitors. The majority of his inventory consists of 95% NOS, and about 5% new (from China), with a limited supply of higher power transmitting tubes and fewer still of big bottles of the 4-1000A variety.

"We generally concentrate on the rare and non-audio tubes. If we get in a bunch of 12AX7s (in high demand for audio), I wholesale them out. We sell to most of what's left of the vacuum tube market."

I was curious where he finds his supply. He said there is no problem finding tubes and probably won't be for a long time, at least 20 years. The supply is world-wide. He buys about 50,000 pieces a month, a lot from Western Europe. Over the years he has had five purchases of at least a million tubes each.

"But I also purchase small quantities. People call me up all the time with supplies that someone finds in the

basement. One day a lady called, says her husband died and she has a three or four drawers of tubes. So I drive down to South Florida, pay her \$300 for the lot, she was happy to get rid of them. Turns out 5 of the tubes were a rare miniature European audio type sealed in plastic. Sold them wholesale for over \$1000 each. Ya never know, that's the fun of the business!"

However, there are a few types that are getting hard to find. The higher power transmitting tubes are getting almost impossible to find, which explains the rise in Chinese production; more on that shortly.

"Believe it or not, old loctal tubes, such as the 7G7, are getting hard to find, which is too bad since there is a big demand from people rebuilding old radios. Two hundred showed up a few days ago and I bought them all. Seems like every day I'm shipping 7s and 14s for old radio rebuilders. Loctals and octal sockets are also in high demand."

Stan explained to me how his low-tech but workable inventory system relies on using a giant spreadsheet to keep track of over 3,000 different types, of which about 20% are still selling actively. To test it I



**Stan usually only takes about 30 trays of the most common RF tubes to Dayton. Needless to say, this is only the tiny tip of the inventory iceberg.**

picked out a tube at random from one of the trays, a 3CX3 (an octal high voltage TV rectifier and a number I've never heard of) to see if Stan could find it in his computer. Turns out he has a couple hundred of these in stock but has never sold any. But ya never know.

### **Testing**

I asked him about testing. He said he doesn't test the tubes he sells unless the customer specifically asks for it, or if the tube looks suspicious. Given the volume he ships, he says it is impractical time-





**It's hard to believe anyone would have a need for a 17GT5, 11KV8, 3CX3, or a 6DV4, but rest easy, if you ever need one you know where to find it!**

wise to test them. Instead he guarantees all tubes for 90 days. If the customer finds it's bad, he usually ships a replacement and tells the customer to discard the bad one.

Stan lamented that his biggest problem is with higher power transmitting tubes (from the 811s, and up). He complained that people ignore his admonishment to "burn them in" (run them with just the filament supply for a day or so) to allow the getter to remove any built-up gas that has accumulated over years of string on the shelf. They just plug 'em in and fire them up and wind up with arcing or grid current runaway, thinking the tube is bad.

### **Supply and Demand**

I was also curious about the "state of the industry." Who is still making tubes?

Who is seriously selling them and who the heck is buying them?

Stan estimates there are 15 to 20 serious sellers in the tube business with ESRC1 probably the biggest "small wholesaler/retailer." Stan will sell you one tube or 10,000 with the same service and is one of the few large sellers who still does hamfests. The biggest dealer, dollar wise, is probably Richardson Electronics in Texas. They specialize in military and large commercial tubes. If you need a 50 kW klystron, that's where to go. Also big is Antique Electronics Supply and [vacuumtubes.net](http://vacuumtubes.net).

The market is primarily antique repair and restoration, collectors, and the audio equipment manufacturers. The latter is divided between guitar amp manufacturers and high-end audio gear.

Stan says the audio industry is only interested in – at most – 200 types out of the approximately 3,000 types he has in his inventory. This has significantly driven up the price for “audio” tubes. The price of the 12AX7 has skyrocketed over the last 10 years. (The Chinese—see below—are building a new 12AX7, but audio purist don’t think they sound as good as the old stock.) In response, clever audio gear designers are finding substitutes, tubes that will do the same task but not as popular or pricey. A new 12AX7 can go for \$22 but an even better dual triode, such as the 6201, goes for about \$8. The 50JY6 mentioned earlier went to China to be substituted for a more expensive audio amplifier tube. This means a lot of his non-audio inventory may turn out to be very useful after all.

The only remaining new tube manufacturer of any size is Shuguang Electron Group Co. Ltd. in China. They purchased a lot of the original American tooling from Raytheon and others. Shuguang is making a lot of the common glass transmitting tubes such as the 811, 813, 3-500, 572B, as well as a range of audio tubes. Stan says that when they have a glass manufacturing problem, Corning will actually send a tech to help them out. RF Parts in California private-labels the Shuguang tubes as “Taylor,” having purchased the brand name from the original manufacturer.

While Eimac is still in business (now part of CPI, LLC), they are only making the higher power ceramic tubes. The original NOS glass Eimac transmitter tubes are still in high demand but are getting very hard to find, which is why Shuguang is remaking a few of them, as well as the sockets.

You might still see some suppliers

selling NOS Svetlana-branded power tubes such as 811A. Svetlana, a large electronics manufacturer in St. Petersburg, used to produce a range of radio and audio tubes with their brand. While they claim they are still making industrial and microwave tubes, the manufacture of low power RF and audio tubes was eliminated.

### Closing

The trip to Stan’s place was not only a very pleasant experience—Stan and Stephanie are very nice people to know—but a real eye-opener. My sleepless nights worrying about whether there would be a supply of 6AU6s and 6146s for my Collins gear when I’m old and grey are unfounded. (Wait—I’m already old and grey!) I do wonder who will be the next generation of “tube nuts” that will inherit Stan’s and others inventory, since, like our radios, the thermatron supply will clearly outlive us all.

*ER*

